

POSITIVE TRAIN CONTROL RF FILTERS

RRF Series Filters

The RRF-ITC and RRF-ACE series of filters are designed to support interoperability of ITC and ACSES frequencies. Engineered for use on the wayside and locomotive, PolyPhaser’s band pass filters reduce interference issues by blocking unwanted signals due to co-locations. These field tested filters meet the AAR Standards and Recommended Practices (Section K Part V, Standard S-9401) “Railroad Electronics Environmental Requirements” Vehicle Interior Non-Cab. The RRF-ITC and RRF-ACE filters compliment PolyPhaser’s line of RRF filters design for 160 MHz, 220 MHz and 450 MHz.



FEATURES

- Passbands of
 - 217-219 MHz
 - 219.5-222 MHz
 - 220-222 MHz
- Up to 60 dB of Isolation
- Two-port Design
- N-Type Female Connectors
- All Ports DC Short Circuited

STANDARDS

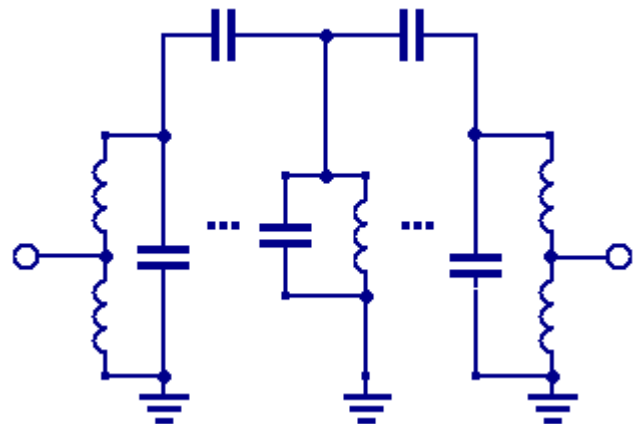
- AAR Standards, Section K Part V, S-9401
- IP54 Rated

GENERAL SPECIFICATIONS

Insertion Loss	Max 2.5dB
VSWR	Max 1.5:1
Return Loss	Max 14dB
Impedance	50Ω

PATENTED TECHNOLOGY

The RRF-ITC and RRF-ACE filters are based on PolyPhaser’s cavity filter technology. The filters are designed to reduce losses in the passband and maximize isolation from interference bands.

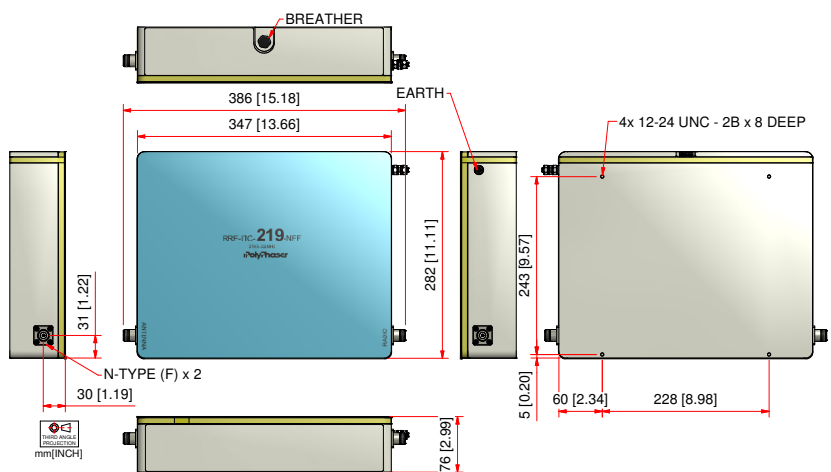


RRF-ITC AND RRF-ACE FILTER PART NUMBERS*

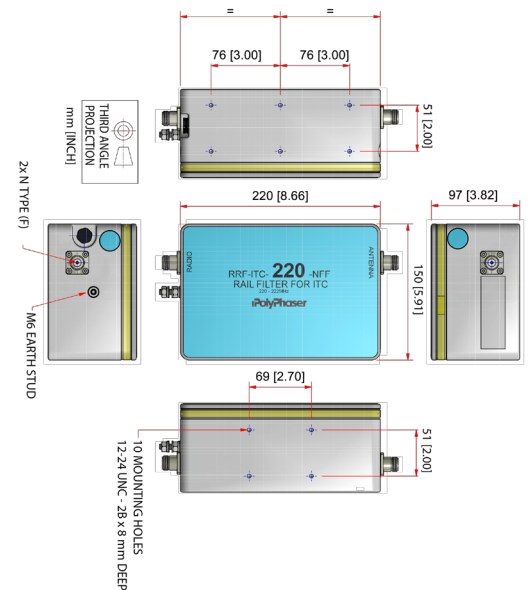
Parameter	RRF-ITC-219-NFF	RRF-ITC-220-NFF	RRF-ACE-220-NFF
Frequency Pass Band	219.5 - 222 MHz	220-222 MHz	217-219 MHz
Frequency Stop Band	217-219 MHz	217-219 MHz	220-222 MHz
Insertion Loss	<2dB Typ / 2.5dBmax	<2.5 dB	<2.5 dB
Stop Band Rejection	>33 dB	>58 dB	>61 dB
88 MHz – 108 MHz 160 MHz – 162 MHz 210 MHz – 216 MHz 452 MHz – 458 MHz	>60 dB	>40 dB	>40 dB
Return Loss, VSWR	>14 dB, 1.5:1	>14 dB, 1.5:1	>14 dB, 1.5:1
Impedance	50 Ohms	50 Ohms	50 Ohms
Maximum Power Input @ Altitude 12000 ft. [3700 m]	20 Watt with 100% Duty Cycle	20 Watt with 100% Duty Cycle	20 Watt with 100% Duty Cycle
RF Connectors	N-Type female	N-Type female	N-Type female
Temperature Range	-40°C to +70°C With Up to 5 Min at +100EC in a Tunnel	-40°C to +70°C With Up to 5 Min at +100EC in a Tunnel	-40°C to +70°C With Up to 5 Min at +100EC in a Tunnel
Humidity (non-condensing)	Max = 95% Min = 40%	Max = 95% Min = 40%	Max = 95% Min = 40%
IP Rating	IP54	IP54	IP54
Vibration	5 to 10 Hz = 7.6 mm 10 to 200 Hz = 1.5 G Mech Shock = 10 G	5 to 10 Hz = 7.6 mm 10 to 200 Hz = 1.5 G Mech Shock = 10 G	5 to 10 Hz = 7.6 mm 10 to 200 Hz = 1.5 G Mech Shock = 10 G
Dimensions H x D x W	15.18 X 11.11 X 2.99 Inches (386 X 282 X 76 mm)	8.66 X 5.91 X 3.82 Inches (220 X 150 X 96 mm)	8.66 X 5.91 X 3.82 Inches (220 X 150 X 96 mm)
Weight lb(kg)	<15.5 lbs (7 kg)	11.25 lbs. (5.1 kg Max)	11.25 lbs. (5.1 kg Max)
Connectors	N-Type (F) x 2	N-Type (F) x 2	N-Type (F) x 2
Mounting	Customer specific, includes optional grounding post	Customer specific, includes optional grounding post	Customer specific, includes optional grounding post

*Confirm with online datasheet for up-to-date specifications

DIMENSIONS



RRF-ITC-219-NFF*



RRF-ITC-220-NFF*
RRF-ACE-220-NFF*